Mozilla's Community Analytics

GrimoireLab and Mozilla's Open Innovation Team
About Us

John “nemo” Giannelos, Software Engineer
Yousef Alam, Infrastructure Engineer
About Mozilla Open Innovation

The Open Innovation Team exists to help Mozilla’s **product and technology** teams move more intentionally towards **open methods across all phases of the lifecycle** to gain long-term competitive advantage.

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**Open by Design**

1. Use our ability to be open to strategically shape ecosystems.

2. Use our flexibility to operate different models of openness depending on needs.

3. Engage our communities (and curate new ones) through open practices across the product lifecycle.
Accessing data at Mozilla

- Integrated with our organization's single-sign on
- Visible on Mozilla's application dashboard (launchpad)
- Accessible to Staff and NDA'd Volunteers
Analytics Scope at Mozilla

- **1844 Github repos**, grouped into 38 projects
- **1786 Bugzilla categories**
  - 319 newsgroups (aka mailing lists)
  - 136 Discourse categories
  - 116 Meetups (Rust)
  - 9 IRC channels
  - 2 Stackoverflow tags
  - Wiki analytics
- Custom connectors
  - **Rust Crates**
    - Mozilla Reps Portal
    - Mozilla Clubs (G Suite form)
Some more numbers

- 1,000,000 newsgroup messages
- 2,500,000 bugzilla issues
- 1,700,000 commits
- 190,000 identities (bugzilla)

Almost 20 years of data points
Implementation Challenges

• Version control systems
  • SVN > Mercurial > Git
• Identity duplication
  • “nemo” vs “John :nemo”
  • Identities across multiple sources
• Assigning organizations
  • Staff vs. non-staff
Example: Rust Adoption

**EmTech Adoption**

**Friends of Rust**

- Logos Added: 34

**Crates**

- 5,552 Created Crates
- 11,486,519 Total Downloads

**The Most Downloaded Crates**

<table>
<thead>
<tr>
<th>Crate</th>
<th>Downloads</th>
<th>Date Created</th>
<th>Last Version Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>serde_derive_internals</td>
<td>867,813</td>
<td>April 26th 2017, 17:12:02.135</td>
<td>December 31st 2017, 04:20:52.135</td>
</tr>
<tr>
<td>percent-encoding</td>
<td>520,809</td>
<td>June 13th 2017, 19:02:11.044</td>
<td>November 11th 2017, 10:44:36.558</td>
</tr>
<tr>
<td>foreign-types</td>
<td>464,946</td>
<td>January 31st 2017, 05:36:40.076</td>
<td>November 29th 2017, 00:17:19.115</td>
</tr>
<tr>
<td>same-file</td>
<td>406,414</td>
<td>January 9th 2017, 00:00:41.755</td>
<td>January 10th 2018, 02:03:17.447</td>
</tr>
<tr>
<td>version.rs</td>
<td>764,954</td>
<td>January 15th 2017, 00:49:45.891</td>
<td>July 11th 2017, 00:30:16.041</td>
</tr>
</tbody>
</table>
Example: Rust General Analytics

Summary

GitHub Issues Summary
- 4,115 issues
- 1,278 submitters
- 2 repositories
- 50th percentile of Median Time to Close in Days: 7.59 days

GitHub PRs Summary
- 4,634 pull requests
- 713 submitters
- 2 repositories
- 50th percentile of Median Time to Close in Days: 2.46 days

Projects

<table>
<thead>
<tr>
<th>Project</th>
<th># Authors</th>
<th># Commits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rust</td>
<td>648</td>
<td>9,990</td>
</tr>
</tbody>
</table>

GitHub Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th># Commits</th>
</tr>
</thead>
<tbody>
<tr>
<td>gmail.com</td>
<td>2,955</td>
</tr>
<tr>
<td>alum.mit.edu</td>
<td>2,387</td>
</tr>
<tr>
<td>alexcritchen.com</td>
<td>655</td>
</tr>
<tr>
<td>mozilla.com</td>
<td>619</td>
</tr>
<tr>
<td>ravel.org</td>
<td>548</td>
</tr>
<tr>
<td>users.noreply.github.com</td>
<td>323</td>
</tr>
<tr>
<td>kube.com.ar</td>
<td>166</td>
</tr>
<tr>
<td>stevekalbrik.com</td>
<td>139</td>
</tr>
<tr>
<td>ncameron.org</td>
<td>133</td>
</tr>
</tbody>
</table>

GitHub Authors

<table>
<thead>
<tr>
<th>Author</th>
<th># Commits</th>
<th>Added Lines</th>
<th>Removed Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nino Matsakis</td>
<td>655</td>
<td>52,942</td>
<td>31,972</td>
</tr>
<tr>
<td>Alex Crichon</td>
<td>619</td>
<td>57,167</td>
<td>44,086</td>
</tr>
<tr>
<td>Oliver Schrader</td>
<td>433</td>
<td>112,191</td>
<td>78,985</td>
</tr>
<tr>
<td>Guillaume Gomez</td>
<td>369</td>
<td>17,521</td>
<td>9,200</td>
</tr>
<tr>
<td>Ariel Ben-Yehuda</td>
<td>334</td>
<td>30,713</td>
<td>21,776</td>
</tr>
<tr>
<td>Corey Farwell</td>
<td>323</td>
<td>8,836</td>
<td>4,700</td>
</tr>
<tr>
<td>Ralf Jung</td>
<td>312</td>
<td>12,009</td>
<td>6,345</td>
</tr>
</tbody>
</table>

GitHub New Contributors

<table>
<thead>
<tr>
<th>Developer</th>
<th>Organization</th>
<th>First Commit Date</th>
<th># Commits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kagamshime</td>
<td>Community</td>
<td>December 29th 2017</td>
<td>2</td>
</tr>
<tr>
<td>Felix Schütt</td>
<td>Community</td>
<td>December 23rd 2017</td>
<td>3</td>
</tr>
</tbody>
</table>

GitHub Repositories

<table>
<thead>
<tr>
<th>Repository</th>
<th># Commits</th>
<th># Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://github.com/rust-lang/rust.git">https://github.com/rust-lang/rust.git</a></td>
<td>9,545</td>
<td>619</td>
</tr>
<tr>
<td><a href="https://github.com/rust-lang/rust.git">https://github.com/rust-lang/rust.git</a></td>
<td>541</td>
<td>84</td>
</tr>
</tbody>
</table>
## The Most Active Developers

<table>
<thead>
<tr>
<th>Author</th>
<th># Modified Files</th>
<th># Added Lines</th>
<th># Removed Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex Crichton</td>
<td>6,198</td>
<td>100,267</td>
<td>59,303</td>
</tr>
<tr>
<td>Oliver Schneider</td>
<td>5,940</td>
<td>124,618</td>
<td>82,393</td>
</tr>
<tr>
<td>Eduard-Mihai Burteescu</td>
<td>3,532</td>
<td>51,413</td>
<td>81,108</td>
</tr>
<tr>
<td>Niko Matsakis</td>
<td>2,793</td>
<td>52,943</td>
<td>31,973</td>
</tr>
<tr>
<td>Esteban Kuber</td>
<td>2,625</td>
<td>39,072</td>
<td>26,214</td>
</tr>
<tr>
<td>Djin</td>
<td>2,407</td>
<td>84,575</td>
<td>73,271</td>
</tr>
<tr>
<td>Vadim Petrochenkov</td>
<td>2,296</td>
<td>18,771</td>
<td>11,815</td>
</tr>
<tr>
<td>Corey Farwell</td>
<td>2,236</td>
<td>24,123</td>
<td>19,781</td>
</tr>
<tr>
<td>Ariel Ben-Yehuda</td>
<td>1,873</td>
<td>31,066</td>
<td>29,116</td>
</tr>
<tr>
<td>Zoxc</td>
<td>1,707</td>
<td>25,265</td>
<td>15,274</td>
</tr>
</tbody>
</table>

## Filepath Path Elements

- libcrc
- bootstrap
- test
- librustc
- src
- mod.rs
- ty
- unstable-book
- librustc_test
- librustc
- librustc_trans
- doc
- librust
- libcore
- compile-fail
- docker
- ui
- libstd
- run-pass
- lib.rs
- cli
- rust
- stderr
- md
- toml
- sh
- lock
- yml
- mk

## Organizations

- Unknown
- Mozilla Staff
- Code Sheriff

## Projects

- Rust

## File Extensions

- rs
- siderr
- md
- toml
- sh
- lock
- yml
- mk

## File Types

- Code
- Other

chaoss.community
What Next?

- Continue to extend and refine our Dashboards
- Organizational adoption of this metrics capability
  - Emerging Technologies
  - TestPilot
  - Open Innovation Communities and Contributors research
- Research into predictive metrics (Don Marti, CHA OSS)
  - “How do you predict impact metrics and contributor reward metrics from activity metrics?” - Don’s Blog
Questions?

• On the web:  
  [https://discourse.mozilla.org/c/participationsystems](https://discourse.mozilla.org/c/participationsystems)

• Twitter:  
  • @hmitsch  
  • @yalam96  
  • @johngiann